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PROFILES IN soil health

Randy Rogers
Sergeant Bluff, Iowa
1,500 acres
Crops: Corn/Soybeans
Planting: No-till/Strip-till

unlock the SECRETS IN THE SOIL

Rogers Successfully No-tills River Bottoms.

By erasing three words from his vocabulary – can't, won't and don't – Woodbury County farmer Randy Rogers has effectively done what most local farmers have been unable or unwilling to do – successfully strip-till corn and no-till soybeans on the Missouri River Bottoms.

Since he began farming with his father in 1977, Rogers' career includes a series of trials and errors. But through it all, he has established a profitable and sustainable cropping system on 1,500 acres near Sergeant Bluff that includes very little soil disturbing activity, like tillage and over-fertilization.

Rogers' Missouri River Alluvium soils, such as Luton and Albaton, are silty clay soils that tend to drain poorly. Most local farmers till these soils to dry and warm the seedbed in the spring. Rogers was like those other farmers until 1996, when he convinced his business partner father to trade in the chisel plow and mulch finisher for a no-till drill.

The transition was smooth, with only minor management and equipment changes along the way. "The first thing I noticed with no-till is the reduction in broadleaf weed pressure," said Rogers. "Other weeds like sunflowers and dandelions became an issue, but we addressed them as we went on."

Strip-tillage gives Rogers excellent in-row emergence and keeps enough crop residue on the surface to hold the soil in place.

By the early 2000s, Rogers' father retired from farming and only his right-hand man Kevin Stuhrenberg, who has been by his side for 34 years, was there to help on the farm. "It's amazing how we've been able to expand our cropland acres with a reduction in labor," he said. "It's a testament to the time savings that no-till

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provides."

"No-till saves me money on fuel and tillage equipment, but I would also need at least four people to do what Kevin and I can with two people right now," said Rogers.

Soil Biology

He says time and cost savings are good enough reasons to transition to no-till, but the real reason he did it is to reduce erosion and improve soil biology. "There are windy days out here where I'm the only one not trading farms across fences," Rogers chuckled. "I cleaned my ditches before I started no-tilling on this flat bottom and I have yet to clean one out since – the soil doesn't move."

Rogers recommends farmers take a spade and dig into their soils. "You can really tell what's going on, and what you need to do," he said.

One of the first things Rogers notices when he digs are earthworm middens, which are small mounds that earthworms build to provide protection from predators when they come out at night to pull food back into their burrow. "Everywhere they go earthworms make a pathway for air, water and roots, and worm castings are the perfectly balanced fertilizer," he said.

"Earthworms do way more for us than we realize. They eat a lot of excess residue, so populations are limited by food availability near the surface," said Rogers.

Other ways Rogers helps improve soil biology:

- To feed soil microbes, Rogers applies sugar to the soil for supplemental nutrition when he sprays herbicide. "It's like feeding them a smorgasbord," he said. "I think it gives the plant a little kick."
- He says sugar also insect-proofs plants since they aren't able to metabolize sugar. "The higher the sugar content, the less insect trouble you will have," said Rogers.
- Applying farm chemicals, such as anhydrous ammonia, can kill many of the soil organisms and compact the soil. Rogers chooses to knife in liquid nitrogen ahead of the planter. "Anhydrous ammonia was used to harden the ground to build runways during World War II," he said.
- Rogers has added Gypsum the last few years to help reduce compaction. "It's done a world of good," he said. "It has changed the texture of the soil noticeably when you start digging."

More and more Iowa farmers are successfully planting soybeans using a no-till drill, and Rogers is doing just that on the tricky Missouri River bottoms.

Strip-Till

His most recent management change involved transitioning to strip-till corn. In the strip-till system, he uses a fertilizer injection shank prior to spring planting. The strip it creates is about five to six inches deep and one-third of the row width.

"My in-row emergence has improved dramatically with strip-till," he said. "The seed to soil contact is better and we get a lot better fertilizer use – we put that in with some stabilizer and don't lose any to volatilization."

Rogers says strip-till has paid dividends three of the last five years. "Cold and wet springs are difficult with no-till corn, but with strip-till we were able to get the germination we needed."

Rogers continues to no-till into his soybeans using a no-till drill.

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